

**EAST SHORE WATER POLLUTION ABATEMENT  
FACILITY  
NEW HAVEN WPCA**

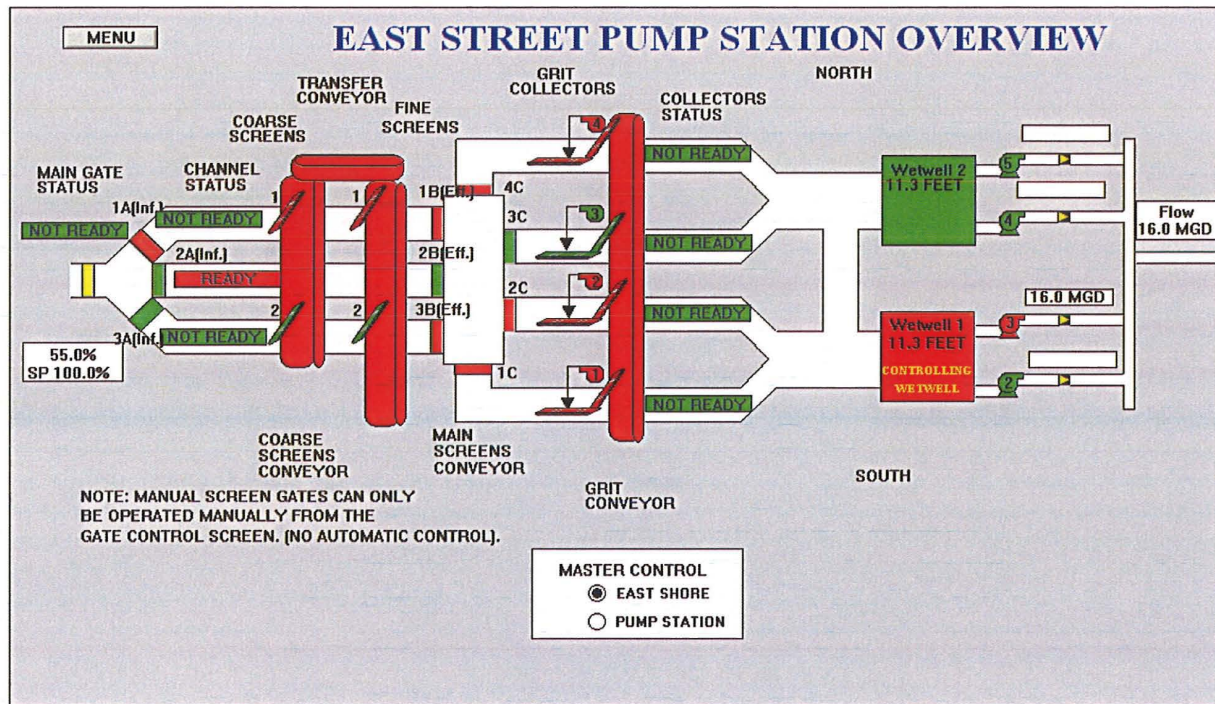
**EAST STREET PUMP STATION SOP  
JUNE 2003**



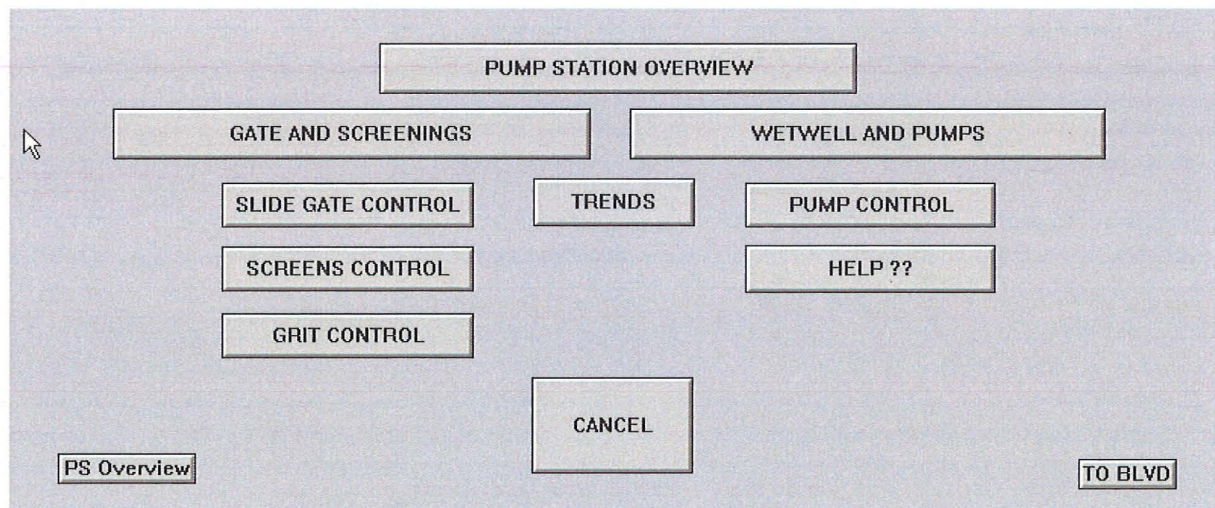
# CONTENTS

EAST STREET PUMP STATION OVERVIEW AND MENU SCREENS	3
EAST STREET SCREENINGS CHANNEL SOP	4
EAST STREET GRIT SYSTEM SOP	8
EAST STREET RAW PUMPS SOP	12
EAST STREET ALARM SCREEN SOP	17
EAST STREET "AS LEFT" CONDITIONS	22

# EAST STREET PUMP STATION OVERVIEW



EAST STREET PUMP STATION OVERVIEW SCREEN



EAST STREET PUMP STATION MENU SCREEN

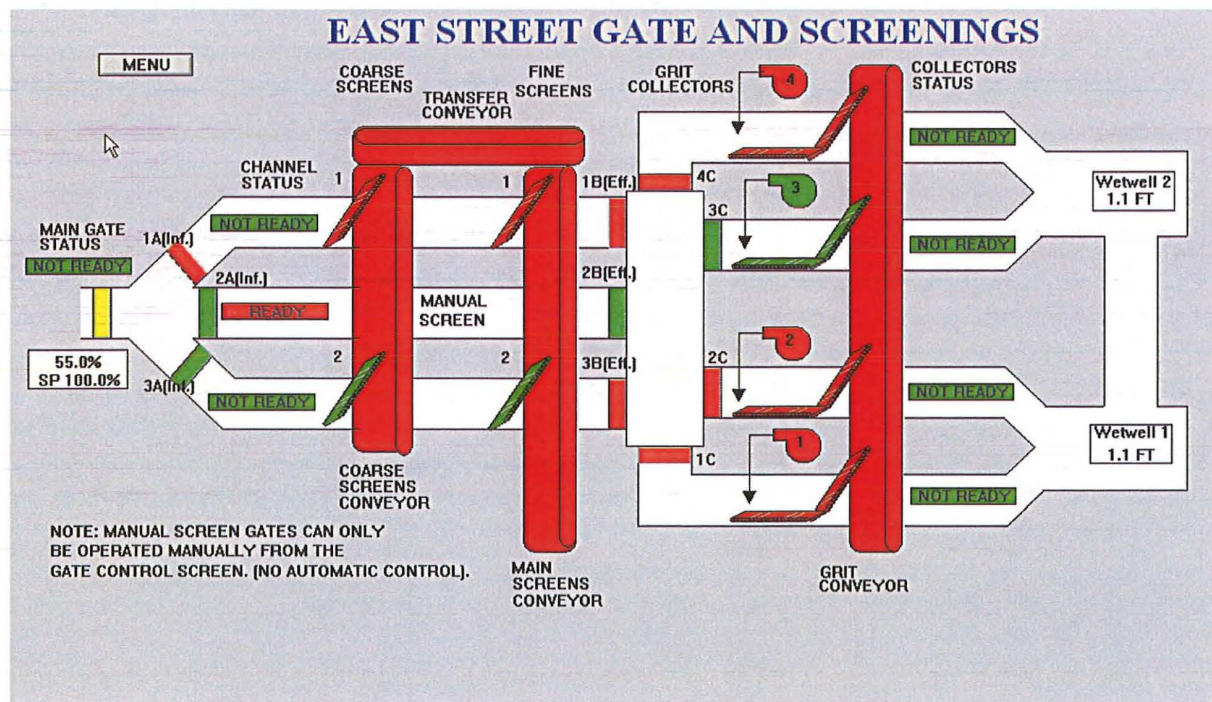


## EAST STREET PUMP STATION SOP SCREENINGS CHANNEL

1. GO TO OVERVIEW SCREEN AND SEE THE STATUS OF THE SCREENING CHANNEL THAT YOU WANT TO PUT INTO SERVICE. IF THE CHANNEL IS "READY", GO TO AUTOMATIC OPERATION - START BELOW. IF THE CHANNEL IS "NOT READY", CHECK THE FOLLOWING:

### CHECK THE SLIDE GATES

- A. ON THE SCREEN, HIT ANYWHERE NEAR THE SCREEN CHANNEL DISPLAY. SHOULD SHOW JUST THE CHANNEL, BAR SCREENS AND WETWELL. HIT ANY OF THE SLIDE GATES DISPLAY. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE CHANNEL GATES, BAR SCREEN GATES, AND WETWELL GATES.
- B. CHECK THE STATUS OF THE GATES THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE GATE TUATOR AND PUT MAN/AUTO SELECTOR SWITCH FOR THE GATE INTO AUTO. ON THE SCREEN, THE STATUS SHOULD BE "READY".
- C. WHEN A GATE IS "READY" YOU CAN MANUALLY CONTROL THE GATE BY HITTING "OPEN"/"STOP"/"CLOSE" ON THE SLIDE GATE CONTROL SCREEN.



EAST STREET PUMP STATION GATE AND SCREENINGS SCREEN



MENU

## EAST STREET SLIDE GATE CONTROL

	STATUS	MODE
CHANNEL 1 INFLUENT SLIDE GATE(1A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 1 EFFLUENT SLIDE GATE(1B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 INFLUENT SLIDE GATE(2A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 EFFLUENT SLIDE GATE(2B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 INFLUENT SLIDE GATE(3A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 EFFLUENT SLIDE GATE(3B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 1C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 2C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 3C	NOT READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 4C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE



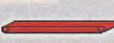




**EAST STREET PUMP STATION SLIDE GATE CONTROL SCREEN**

### CHECK THE BAR SCREENS AND CONVEYORS

- A. ON THE SCREEN, HIT ANYWHERE NEAR THE SCREEN CHANNEL DISPLAY. SHOULD SHOW JUST THE CHANNEL, BAR SCREENS AND WETWELL. HIT ANY OF THE BAR SCREEN OR CONVEYOR. THIS SHOWS THE STATUS AND MODE OF ALL OF THE BAR SCREENS AND CONVEYORS.
- B. CHECK THE STATUS OF THE SCREENS AND CONVEYORS THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE SCREEN ROOM AND PUT THE LOCAL/REMOTE SELECTOR SWITCH FOR THE SCREEN OR CONVEYOR INTO REMOTE. ON THE SCREEN, THE STATUS SHOULD BE "READY".
- C. WHEN A SCREEN OR CONVEYOR IS "READY" YOU CAN MANUALLY CONTROL THE SCREEN OR CONVEYOR BY HITTING "HAND" ON THE SCREENS CONTROL SCREEN. HIT "OFF" TO STOP THE SCREEN OR CONVEYOR.



### EAST STREET SCREENS CONTROL

MENU	STATUS	MODE	OFF TIME	ON TIME	
COARSE BAR SCREEN 1	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	15.0 min	5.0 min	
COARSE BAR SCREEN 2	NOT READY OFF	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	15.0 min	5.0 min	
COARSE SCREEN CONVEYOR	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO			
FINE BAR SCREEN 1	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	15.0 min	5.0 min	
FINE BAR SCREEN 2	READY OFF	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	15.0 min	5.0 min	
MAIN CONVEYOR	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	20.0 min	5.0 min	
TRANSFER CONVEYOR	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO			

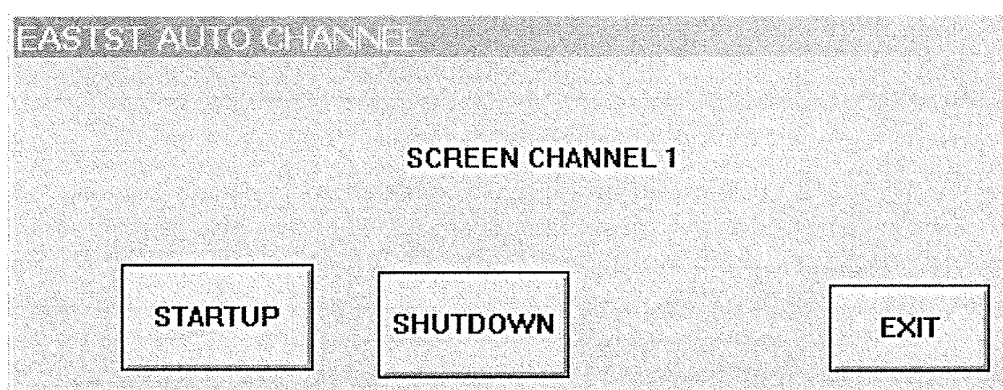
EAST STREET PUMP STATION SCREENS CONTROL SCREEN

### AUTOMATIC OPERATION - START

- A. PRIOR TO OPERATING THE SLIDE GATES, SCREENS, AND CONVEYORS IN AUTOMATIC, VERIFY THE ON/OFF TIMES FOR THE SCREENS AND CONVEYORS ARE SET. HIT "MENU". HIT "SCREEN CONTROL". SET THE ON AND OFF TIMES FOR THE EQUIPMENT TO BE CONTROLLED.
- B. HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "EXIT" SELECTIONS. HIT "STARTUP".
- C. WHEN "STARTUP" IS SELECTED, THE FOLLOWING SEQUENCE WILL HAPPEN:
  - 1) THE "A" SLIDE GATE WILL OPEN.
  - 2) WHEN "A" GATE IS OPEN, THE "B" GATE WILL OPEN.
  - 3) WHEN THE "B" GATE IS OPEN, THE COARSE AND FINE BAR SCREENS WILL START.
  - 4) WHEN THE COARSE SCREEN IS ON, THE COARSE SCREEN CONVEYOR WILL START.
  - 5) WHEN THE FINE SCREEN IS ON, THE FINE SCREEN CONVEYOR WILL START.
- D. CHANNEL IS NOW IN AUTOMATIC MODE OF OPERATION.

## AUTOMATIC OPERATION - STOP

- A. IF YOU WANT TO STOP THE SEQUENCE, HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "CANCEL" SELECTIONS. HIT "SHUTDOWN".
- B. THE FOLLOWING SEQUENCE WILL HAPPEN:
- 1) THE "A" GATE WILL CLOSE.
  - 2) WHEN "A" GATE IS CLOSED, THE "B" GATE WILL CLOSE.
  - 3) WHEN THE "A" GATE STARTS TO CLOSE, THE COARSE AND FINE BAR SCREENS WILL STOP.
  - 4) WHEN COARSE SCREEN IS OFF, THE COARSE SCREEN CONVEYOR WILL STOP.
  - 5) WHEN THE FINE SCREEN IS OFF, THE FINE SCREEN CONVEYOR WILL STOP.



TYPICAL AUTO CHANNEL STARTUP AND SHUTDOWN SCREEN

## **EAST STREET PUMP STATION GRIT SYSTEM SOP**

**GO TO OVERVIEW SCREEN AND SEE THE STATUS OF THE GRIT CHANNEL THAT YOU WANT TO PUT INTO SERVICE. IF THE CHANNEL IS "READY", GO TO AUTOMATIC OPERATION - START DESCRIPTION BELOW. FOR A CHANNEL TO BE READY, ALL OF THE FOLLOWING STATUS MUST BE SATIFIED:**

- 1. THE INLET GATE IS READY.**
- 2. THE GRIT COLLECTOR IS READY.**
- 3. THE GRIT COLLECTOR IS IN AUTO ON THE GRIT CONTROL SCREEN.**
- 4. THE GRIT BLOWER IS READY.**
- 5. THE GRIT BLOWER IS IN AUTO ON THE GRIT CONTROL SCREEN.**

**IF THE CHANNEL IS "NOT READY", CHECK THE FOLLOWING:**

### **CHECK THE SLIDE GATES**

- A. ON THE SCREEN, HIT ANYWHERE NEAR THE SCREEN CHANNEL DISPLAY. SHOULD SHOW JUST THE CHANNEL, GRIT COLLECTORS, GRIT CONVEYOR, BLOWERS, AND WETWELL. HIT ANY OF THE SLIDE GATES DISPLAY. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE CHANNEL GATES, BAR SCREEN GATES, AND WETWELL GATES.**
- B. CHECK THE STATUS OF THE GATES THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE GATE ACTUATOR AND PUT THE MAN/AUTO SELECTOR SWITCH FOR THE GATE INTO AUTO. ON THE SCREEN, THE STATUS SHOULD BE "READY".**
- C. WHEN A GATE IS "READY" YOU CAN MANUALLY CONTROL THE GATE BY HITTING "OPEN"/"STOP"/"CLOSE" ON THE SLIDE GATE CONTROL SCREEN.**



MENU

## EAST STREET SLIDE GATE CONTROL

	STATUS	MODE
CHANNEL 1 INFLUENT SLIDE GATE(1A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 1 EFFLUENT SLIDE GATE(1B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 INFLUENT SLIDE GATE(2A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 EFFLUENT SLIDE GATE(2B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 INFLUENT SLIDE GATE(3A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 EFFLUENT SLIDE GATE(3B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 1C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 2C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 3C	NOT READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 4C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE

**EAST STREET PUMP STATION SLIDE GATE CONTROL SCREEN**

### CHECK THE GRIT COLLECTORS, GRIT CONVEYOR AND BLOWERS

- A. ON THE OVERVIEW SCREEN, HIT ANYWHERE NEAR THE GRIT SYSTEM DISPLAY. SHOULD SHOW JUST THE GRIT COLLECTORS, GRIT CONVEYOR, AND BLOWERS. HIT ANY OF THE GRIT COLLECTORS, GRIT CONVEYOR OR BLOWER. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE GRIT COLLECTORS, GRIT CONVEYOR, AND BLOWERS.
- B. CHECK THE STATUS OF THE GRIT COLLECTORS, GRIT CONVEYOR AND BLOWERS THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", FOR THE GRIT COLLECTORS AND GRIT CONVEYOR, GO TO THE INLET WORKS MCC ROOM AND PUT THE LOCAL/REMOTE SELECTOR SWITCH FOR THE COLLECTORS AND CONVEYOR INTO REMOTE. ON THE SCREEN, THE STATUS SHOULD BE "READY". FOR THE GRIT BLOWERS, GO TO THE INLET WORKS MCC ROOM AND PUT THE LOCAL/REMOTE SELECTOR SWITCH INTO REMOTE. THE STATUS FOR THE BLOWER SHOULD BE "READY".
- C. WHEN A GRIT COLLECTOR, GRIT CONVEYOR OR BLOWER IS "READY", YOU CAN MANUALLY CONTROL THE GRIT COLLECTOR, GRIT CONVEYOR, OR BLOWER BY HITTING "HAND" ON THE GRIT CONTROL SCREEN. HIT "OFF" TO STOP THE SCREEN OR



CONVEYOR. FOR AUTOMATIC OPERATION, HIT "AUTO" FOR THE GRIT COLLECTOR, GRIT CONVEYOR, OR BLOWER THAT IS TO BE OPERATED AUTOMATICALLY.

**EAST STREET GRIT CONTROL**

	STATUS	MODE	OFF TIME	ON TIME	
GRIT BLOWER 1	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO			1
GRIT BLOWER 2	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO			2
GRIT BLOWER 3	NOT READY OFF	<input type="radio"/> HAND <input checked="" type="radio"/> OFF <input type="radio"/> AUTO			3
GRIT BLOWER 4	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO			4
GRIT COLLECTOR 1	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	20.0 min	10.0 min	
GRIT COLLECTOR 2	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	20.0 min	10.0 min	
GRIT COLLECTOR 3	NOT READY OFF	<input type="radio"/> HAND <input checked="" type="radio"/> OFF <input type="radio"/> AUTO	20.0 min	10.0 min	
GRIT COLLECTOR 4	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	20.0 min	10.0 min	
GRIT CONVEYOR	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO			

**MENU**

EAST STREET PUMP STATION GRIT CONTROL SCREEN

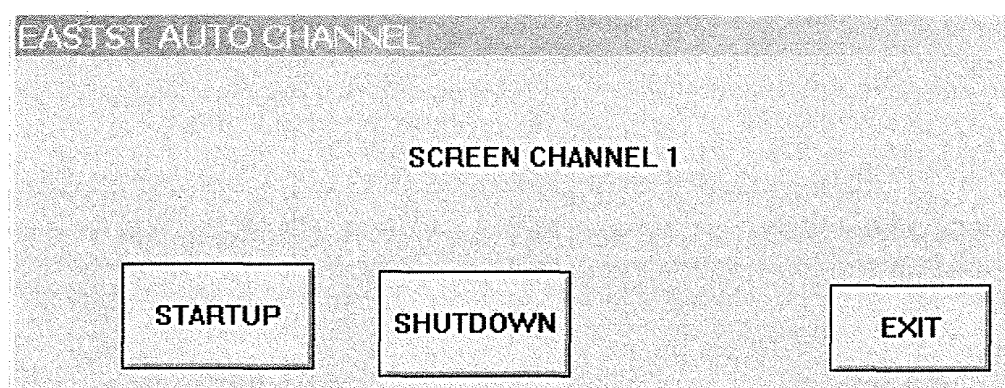
### AUTOMATIC OPERATION - START

- A. PRIOR TO OPERATING THE SLIDE GATES, GRIT COLLECTOR, BLOWER AND GRIT CONVEYOR IN AUTOMATIC, VERIFY THE ON/OFF TIMES FOR THE SCREENS AND CONVEYORS ARE SET. HIT "MENU". HIT "SCREEN CONTROL". SET THE ON AND OFF TIMES FOR THE EQUIPMENT TO BE CONTROLLED.
- B. HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "CANCEL" SELECTIONS. HIT "STARTUP".
- C. THE FOLLOWING SEQUENCE WILL HAPPEN:
  1. THE "C" SLIDE GATE WILL OPEN.
  2. WHEN "C" GATE IS OPEN, THE GRIT COLLECTOR WILL START..
  3. WHEN THE GRIT COLLECTOR IS ON, THE GRIT BLOWER WILL START..
  4. THE GRIT CONVEYOR WILL START AND TURN ON AND OFF BASED ON THE TIMER SETTINGS.

5. WHEN THE FINE SCREEN IS ON, THE FINE SCREEN CONVEYOR WILL START.
- D. CHANNEL IS NOW IN AUTOMATIC MODE OF OPERATION.

### **AUTOMATIC OPERATION - STOP**

- A. IF YOU WANT TO STOP THE SEQUENCE, HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "CANCEL" SELECTIONS. HIT "SHUTDOWN".
- B. THE FOLLOWING SEQUENCE WILL HAPPEN:
1. THE "C" GATE WILL CLOSE.
  2. WHEN "C" GATE IS CLOSED, THE GRIT COLLECTOR WILL STOP.
  3. WHEN THE GRIT COLLECTOR IS OFF, THE GRIT BLOWER WILL STOP.
  4. WHEN THE GRIT BLOWER IS OFF, THE GRIT CONVEYOR WILL STOP.



EAST STREET PUMP STATION AUTO CHANNEL STARTUP AND SHUTDOWN SCREEN







## **EAST STREET PUMP STATION RAW PUMPS SOP**

**GO TO OVERVIEW SCREEN AND SEE THE STATUS OF THE RAW PUMPS THAT YOU WANT TO PUT INTO SERVICE. IF THE PUMP IS "READY", GO TO AUTOMATIC OPERATION - START DESCRIPTION BELOW. IF THE PUMP IS "NOT READY", CHECK THE FOLLOWING:**

### **CHECK THE PUMPS DRIVE PANELS**

- A. ON THE OVERVIEW SCREEN, HIT ANYWHERE NEAR THE RAW PUMPS DISPLAY. NEW DISPLAY SHOULD SHOW JUST THE WETWELL GATES, WETWELLS, AND RAW PUMPS. HIT ANY RAW PUMP DISPLAY. NEW DISPLAY SHOULD SHOW THE STATUS AND MODE OF ALL OF THE WETWELLS AND RAW PUMPS.**
- B. CHECK THE STATUS OF THE PUMPS THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE ELECTRO-RHEOSTAT DRIVE PANEL FOR THE PUMP TO BE IN SERVICE AND PUT THE MAN/OFF/AUTO SELECTOR SWITCH FOR THE PUMP INTO AUTO. ALSO PUT THE AUTO/MANUAL SPEED MODE SWITCH INTO AUTO. ON THE SCREEN, THE STATUS SHOULD BE "READY".**
- C. WHEN A PUMP IS "READY" YOU CAN MANUALLY CONTROL THE PUMP BY HITTING "HAND"/"OFF"/"AUTO" ON THE PUMP CONTROL SCREEN. YOU CANNOT SET THE SPEED OF THE PUMP FROM THE SCREEN! THE PUMPS SPEED CAN BE MANUALLY CHANGED AT THE ELECTRO-RHEOSTAT PANEL USING THE AUTO/MANUAL SPEED MODE SWITCH AND THE POTENTIOMETER ON THE DOOR. BEFORE PUTTING THE PUMP INTO AUTOMATIC MODE, SEE AUTOMATIC OPERATION - START DESCRIPTIONS BELOW!!!!!!.**

MENU		EAST STREET PUMP CONTROL			
		STATUS	SPEED	PUMP MODE	CURRENT FLOW TOTALIZED FLOW
<b>WETWELL 2</b> LEVEL: 10.8 FEET	PUMP 5	READY OFF BACKUP		<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	3,980.658 MG 
	PUMP 4	READY OFF STANDBY		<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	650.488 MG 
<b>WETWELL 1</b> LEVEL: 10.7 FEET CONTROLLING WETWELL	PUMP 3	READY ON LAG	687 RPM	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	16.2 MGD 1,597.317 MG 
	PUMP 2	NOT READY OFF LEAD		<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	1,624.538 MG 
LEAD ALTERNATE <input checked="" type="radio"/> AUTO <input type="radio"/> MANUAL AUTO ALTERNATE TIME: 0 HRS TIME REMAINING: 0 HRS, 0 MINS		PUMP CONTROL SETPOINTS			

EAST STREET PUMP STATION PUMP CONTROL SCREEN

## CHECK OUT PRIOR TO AUTOMATIC OPERATION

- A. PRIOR TO PUTTING THE PUMPS IN AUTOMATIC MODE ON THE PUMP CONTROL SCREEN, DO THE FOLLOWING:
- B. SELECT THE LEAD, LAG, AND STANDBY PUMP ASSIGNMENT. ON THE PUMP CONTROL SCREEN THERE IS A "LEAD PUMP ASSIGNMENT" RECTANGLE. HIT THE RECTANGLE. THERE WILL BE A POP-UP THAT READS LEAD PUMP ASSIGNMENT AND SELECTIONS FOR PUMP 2, PUMP, 3, PUMP 4, AND PUMP 5. THE LEAD/LAG/STANDBY PUMPS START AND STOP ORDER ARE BASED LEAD PUMP SELECTION. IF YOU SELECT "PUMP 2", PUMP 2 WILL BE THE LEAD, PUMP 3 WILL BE THE LAG, AND PUMP 4 WILL BE THE STANDBY. IF YOU SELECT "PUMP 5", PUMP 5 WILL BE THE LEAD, PUMP 2 WILL BE THE LAG, AND PUMP 3 WILL BE THE STANDBY. AFTER THE SELECTIONS, GO TO THE PUMP CONTROL SCREEN. YOU SHOULD SEE WHICH PUMP ARE SET FOR LEAD, LAG, STANDBY, AND BACKUP.



**EASTST LEAD PUMP ASSIGNMENT**

LEAD ☒ PUMP 2 ☐ PUMP 3 ☐ PUMP 4 ☐ PUMP 5

DONE

EAST STREET PUMP STATION LEAD PUMP ASSIGNMENT SCREEN

- C. VERIFY THE PUMPS START AND STOP LEVEL SETPOINTS AND THE WETWELL LEVEL SETPOINT. ON THE PUMP CONTROL SCREEN THERE IS A "PUMP CONTROLS" RECTANGLE. HIT THE RECTANGLE. THERE WILL BE A POP-UP THAT HAS THE LEAD, LAG, AND STANDBY PUMPS START AND STOP LEVEL SETPOINTS. ALSO ON THE SCREEN ARE THE WETWELL LEVEL AND GATE CONTROL SETPOINTS. THE VALUES TO ENTER ARE BASED ON HOW THE STATION IS TO BE OPERATED.

**EASTST PUMP CONTROL SETPOINTS**

	START	STOP
LEAD PUMP	12.0 Feet	8.0 Feet
LAG PUMP	13.0 Feet	9.0 Feet
STANDBY PUMP	15.0 Feet	10.0 Feet

GATE CONTROL SETPOINT 17.0 Feet

OK

EAST STREET PUMP STATION CONTROL SETPOINTS SCREEN

- D. VERIFY IF YOU WANT MANUAL OR AUTOMATIC ALTERNATION OF THE LEAD, LAG, AND STANDBY PUMPS. ON THE PUMPS CONTROL SCREEN THERE IS "LEAD ALTERNATE" RECTANGLE WITH "AUTO" AND "MANUAL" SELECTION. THE PRESENT SELECTION WILL BE IN RED. IF "MANUAL" IS SELECTED, THE PUMPS WILL NOT ALTERNATE, THEY WILL BE OPERATED BASED ON THE LEAD, LAG, AND STANDBY SELECTIONS DESCRIBED ABOVE. IF "AUTO" IS



SELECTED, THE PUMPS WILL AUTOMATICALLY OPERATED BASED ON THE "AUTO ALTERNATE TIME" ENTERED. THE TIME REMAINING BEFORE THE NEXT ALTERNATION IS DISPLAYED. THE ALTERNATION WILL FOLLOW THE SAME LEAD, LAG, AND STANDBY ORDER DESCRIBED ABOVE.

- E. SELECT WHICH WETWELL LEVEL SIGNAL WILL BE USED TO CONTROL THE PUMPS. GO TO THE OVERVIEW SCREEN AND HIT ANY WETWELL. A NEW SCREEN WITH WETWELL GATES, WETWELL AND RAW PUMPS WILL SHOW UP. HIT EITHER WETWELL. A POPUP "CHOSE A WETWELL LEVEL FOR PUMP CONTROL" WILL APPEAR. SELECT WHICH WETWELL IS TO BE USED.
- F. NOTE: ONLY ONE PUMP CONTROL PANEL EXISTS AT THE EAST ST. STATION. YOU CAN REMOVE SOME RELAYS FROM THE KNAPP PUMP PANEL TO RUN OFF THE OLD SYSTEM. CONTACT AL OR CHARLIE.
- F. YOU WILL THEN NEED GO TO THE SCREEN AND FOLLOW THE AUTOMATIC OPERATION - START DESCRIBED!!!! FAILURE TO DO THIS WILL RESULT IN NO PUMPS OPERATING!!!

### **AUTOMATIC OPERATION - START**

GO TO THE MENU SCREEN AND HIT "PUMPS CONTROL". THE PUMP CONTROL SCREEN WILL APPEAR. SELECT "AUTO" FOR THOSE PUMPS THAT YOU WISH TO OPERATE. THE FOLLOWING SEQUENCE WILL HAPPEN:

- A. WHEN THE LEAD PUMP START LEVEL SETPOINT IS REACHED FOR THE LEAD PUMP, THE LEAD PUMP WILL START AND SPEED WILL INCREASE.
- B. WHEN THE PRESSURE ON THE PUMP DISCHARGE IS HIGHER THAN THE PIPELINE PRESSURE, THE SURGE VALVE WILL OPEN. A PRESSURE DIFFERENTIAL SWITCH AT THE PUMP IS USED TO DETECT THE PRESSURE.
- C. THE PUMP SPEED WILL AUTOMATICALLY ADJUST TO MAINTAIN THE WETWELL LEVEL SETPOINT.
- D. THE PUMP IS NOW ON-LINE.
- E. WHEN THE LAG PUMP START LEVEL SETPOINT IS REACHED, THE LAG PUMP WILL START SIMILAR TO THE LEAD PUMP SEQUENCE.
- F. WHEN THE STANDBY PUMP START LEVEL SETPOINT IS REACHED, THE STANDBY PUMP WILL START SIMILAR TO THE LEAD PUMP SEQUENCE.
- G. IF A PUMP IN THE SEQUENCE DOES NOT START, THE NEXT PUMP WILL START WHEN THE WETWELL LEVEL INCREASES TO THAT PUMP'S START SETPOINT.

## **AUTOMATIC OPERATION - STOP**

- A. WHEN THE WETWELL LEVEL FALLS BELOW THE PUMP STOP SETPOINT, THE FOLLOWING SEQUENCE WILL HAPPEN:**
  - 1. THE PUMP SURGE VALVE WILL START TO CLOSE.**
  - 2. WHEN THE SURGE VALVE IS 95 PERCENT CLOSED, THE PUMP WILL STOP.**

## **MANUAL OPERATION - START**

**GO TO THE MENU SCREEN AND HIT "PUMPS CONTROL". PUMP CONTROL SCREEN WILL APPEAR. THE SPEED CAN ONLY BE SET AT THE ELECTRO-RHEOSTAT PANEL. THE FOLLOWING SEQUENCE WILL HAPPEN:**

- A. THE PUMP WILL START AND SPEED WILL INCREASE TO THE MANUAL SPEED SETPOINT..**
- B. WHEN THE PRESSURE ON THE PUMP DISCHARGE IS HIGHER THAN THE PIPELINE PRESSURE, THE SURGE VALVE WILL OPEN. A PRESSURE DIFFERENTIAL SWITCH AT THE PUMP IS USED TO DETECT THE PRESSURE.**
- C. THE PUMP IS NOW ON-LINE.**

## **MANUAL OPERATION - STOP**

- A. IF A PUMP IS PUT INTO "OFF" FROM THE SCREEN, THE FOLLOWING SEQUENCE WILL HAPPEN:**
  - 1) THE PUMP SURGE VALVE WILL START TO CLOSE.**
  - 2) WHEN THE SURGE VALVE IS 95 PERCENT CLOSED, THE PUMP WILL STOP.**

## **EAST STREET STATION ALARM SCREEN SOP**

---

**NOTE-( A \*\*\* NEXT TO ALARM INDICATES ACTION ON THE PART OF THE OPERATOR.**

**NOTIFY THE APPROPRIATE PERSONNEL TO RESPOND TO THE PROBLEM.)**

### **BUILDING UTILITIES ALARMS**

- 1. GENERATOR RUN  
INDICATES STATION GENERATOR IS RUNNING FROM EITHER A TEST OR POWER FAILURE**
- 2. GENERATOR FAILURE  
INDICATES GENERATOR HAS FAILED DURING A TEST OR POWER FAILURE. \*\*\***
- 3. LOSS OF NORMAL POWER  
INDICATES ELECTRIC SERVICE AS BEEN INTERRUPTED AT THE STATION. THE GENERATOR SHOULD HAVE STARTED AND THE TRANSFER SWITCH CLOSED TO EMERGENCY POWER. \*\*\***
- 4. ELECTRICAL GROUND FAULT  
THE GROUND FAULT MONITOR AS SENSED A POTENTIAL TO GROUND AND WILL TRIP THE MAIN BREAKER FOR THE STATION. ALL POWER TO THE STATION WILL BE OFF. \*\*\***
- 5. BUILDING INTRUSION  
INDICATES THAT A DOOR SWITCH HAS BEEN ACTIVATED. ALARM WILL NOT CLEAR TILL DOOR IS CLOSED. REQUIRES AFTER HOURS RESPONSE. \*\*\***
- 6. BOILER FAILURE  
GENERAL ALARM FOR BOTH BOILERS. DOES NOT REQUIRE IMMEDIATE ACTION UNLESS ALARM FOR LOW BUILDING TEMPERATURE IS ALSO ACTIVATED. IN WHICH CASE CALL. \*\*\***
- 7. FIRE ALARM**



INDICATES THAT A FIRE ALARM CONDITION EXISTS SOMEWHERE IN THE FACILITY.\*\*\*

**8. FIRE ALARM TROUBLE**

INDICATES THAT WITHIN THE FIRE PANEL THERE IS A ZONE FAULT OR OTHER PROBLEM. PROBLEM CAN BE CORRECTED THE NEXT DAY. REPORT PROBLEM.

**9. SUMP PIT HIGH LEVEL**

INDICATES THE DRY WELL FLOAT IN THE BASEMENT HAS BEEN ACTIVATED AND A FLOODING CONDITION EXISTS. \*\*\*

**10. HVAC FAILURE**

INDICATES FAILURE OF ONE OF THE AIR HANDLING UNITS IN THE BUILDING. DOES NOT REQUIRE IMMEDIATE ACTION UNLESS ALARM FOR LOW BUILDING TEMPERATURE IS ALSO ACTIVATED. IN WHICH CASE CALL. \*\*\*

**11. WETWELL GAS ALARM**

INDICATES A HIGH LEVEL OF H<sub>2</sub>S GAS IN THE WETWELL AREA. NOTE: EXISTING SYSTEM DOES NOT FUNCTION.

**12. PRETREATMENT GAS ALARM**

INDICATES A HIGH LEVEL OF H<sub>2</sub>S GAS IN THE PRETREATMENT AREA. NOTE: EXISTING SYSTEM DOES NOT FUNCTION.

**13. ODOR CONTROL FAILURE**

INDICATES A GENERAL FAILURE OF THE ODOR CONTROL SYSTEM FOR THE PRETREATMENT AND WETWELL AREAS. NOTE: EXISTING SYSTEM DOES NOT FUNCTION.

**14. LOSS OF COMMUNICATIONS**

THIS IS WILL ONLY SHOW ON THE EAST SHORE SCREEN. INDICATES LOSS OF PHONE SERVICE BETWEEN EAST SHORE AND THE STATION. \*\*\*

**15. LOSS OF INSTRUMENT AIR**

INDICATES A MALFUNCTION OF THE AIR COMPRESSOR, WHICH SUPPLIES AIR TO THE WETWELL BUBBLER SYSTEM AND THE BAR SCREEN CHANNEL DIFFERENTIAL LEVEL INDICATOR. LOSS OF THIS SIGNAL WILL RESULT IN PUMPS RUNNING OFF OF HIGH AND LOW PUMP FLOATS. \*\*\*

## **WETWELL AND PUMP CONTROL ALARMS**

1. **LOW SEAL WATER PRESSURE- COMMON TO EITHER PUMPS 2,3,4,5**  
INDICATES THAT SEAL WATER TO THE MECHANICAL SEALS ON ONE OF THESE PUMPS HAS BEEN LOST, WHICH WILL CAUSE THE AFFECTED PUMP TO SHUT DOWN. \*\*\*
2. **VFD FAULT- COMMON TO EITHER PUMPS 2,3,4,5**  
INDICATES THAT A CONDITION IN THE AFFECTED PUMP DRIVES CAUSED THE DRIVE TO SHUT DOWN. \*\*\*
3. **SURGE VALVE FAILURE**  
INDICATES A PROBLEM EXISTS IN THE SURGE CONTROL PANEL , WHICH SUPPLIES HYDRAULIC PRESSURE TO OPEN AND CLOSE PUMP THE DISCHARGE VALVES FOR EACH PUMP. \*\*\*
4. **WETWELL LOW LEVEL ALARM - COMMON TO EITHER WETWELL 1 OR 2**  
INDICATES THE LOW LEVEL FLOAT IN EITHER WETWELL 1 OR 2 HAS BEEN ACTIVATED. THIS WILL CAUSE PUMPS 1 AND 2 , WHICH DRAW FROM #1 WETWELL TO SHUT DOWN OR PUMPS 3 AND 4 TO SHUT DOWN ON WETWELL 2. THIS PROBLEM WILL USUALLY BE THE RESULT OF ANOTHER ALARM CONDITION. \*\*\*
5. **HIGH WETWELL ALARM - COMMON TO EITHER WETWELL 1 OR 2**  
INDICATES THAT THE HIGH WETWELL FLOAT HAS BEEN ACTIVATED. WITH THIS CONDITION THE STATION SHOULD BE OPERATING WITH THREE PUMPS AT FULL SPEED. CHECK TO SEE THAT THE MAIN INFLUENT GATE TO THE STATION IS MODULATING IT SHOULD BE AT 10% OPEN LIMITING THE AMOUNT OF FLOW TO PREVENT THE WETWELLS FROM FLOODING. \*\*\*

## **PRETREATMENT AREA ALARMS**

1. **GRIT CHANNEL SHEAR PIN - COMMON TO EITHER 1,2,3,4 GRIT CHANNELS**  
INDICATES THE OPERATING GRIT CHANNEL SHEAR PIN HAS BROKEN STOPPING THE GRIT CHANNEL.  
SHUT DOWN THE AFFECTED CHANNEL AND CLOSE THE INFLUENT GATE. START-UP THE NEXT AVAILABLE CHANNEL. IF NO CHANNELS ARE AVAILABLE CALL IN PERSONNEL. \*\*\*
2. **GRIT CONVEYOR ZERO MOTION**

INDICATES THE STARTER FOR THIS CONVEYOR IS PULLED IN AND THE MOTION SENSOR SEES NO ROTATION. \*\*\*

3. GRIT BLOWER FAILURE - COMMON TO EITHER BLOWER 1,2,3,4  
INDICATES THE STARTER HAS TRIPPED FOR THE AFFECTED GRIT CHANNEL BLOWER. THIS CAN RESULT IN SOLIDS CARRY OVER TO THE WETWELL. CALL IN PERSONNEL IF THE PROBLEM CAN'T BE CORRECTED WITHIN 8 HRS. OR DURING A STORM EVENT. \*\*\*
4. BAR SCREEN SHEAR PIN ALARM - COMMON TO FINE AND COARSE BAR SCREENS 1 OR 2  
INDICATES THE OPERATING BAR SCREEN SHEAR PIN HAS BROKEN STOPPING THE SCREEN FROM OPERATING. THIS PROBLEM NEEDS TO BE CORRECTED ASAP BEFORE THE BAR SCREEN BECOMES BLINDED BACKING UP THE FLOW EVENTUALLY CREATING A CSO EVENT. \*\*\*
5. FINE SCREEN AND COARSE SCREEN CONVEYOR ZERO MOTION  
INDICATES THE STARTER FOR THIS CONVEYOR IS PULLED IN AND THE MOTION SENSOR SEES NO ROTATION. \*\*\*
6. HIGH SCREEN HEAD LOSS  
UNDER NORMAL CONDITIONS THE BAR SCREENS WILL BE RUNNING IN AUTOMATIC OFF A PRESET TIMING CYCLE. WHEN THIS ALARM COMES IN IT WILL INDICATE THAT BETWEEN THE TIMING CYCLE THE DIFFERENTIAL ACROSS THE BAR SCREEN HAS CHANGES AND SHOULD START THE SCREEN. IF THIS CONDITION EXISTS FOR MORE THAN 15MIN. THAT COULD INDICATE A SHEAR PIN OR BAR SCREEN PROBLEM THAT WILL REQUIRE ATTENTION. \*\*\*
7. HIGH INFLUENT CHANNEL  
ALARM INDICATES THAT THE LEVEL IN THE CHAMBER AFTER THE INFLUENT GATE IS HIGH. THIS WOULD NORMALLY BE ACCOMPANIED BY ADDITIONAL ALARMS OR DURING A STORM EVENT. THIS ALARM IS TO INFORM YOU THAT THE STATION WILL BE OVER FLOWING AT THE CSO SOON. \*\*\*
8. BYPASS ALARM  
INDICATES THAT THE STATION IS OVER FLOWING AT THE CSO. \*\*\*
9. HYDRAULIC CONTROL PANEL ALARM  
INDICATES A PROBLEM WITH THE HYDRAULIC CONTROL PANEL THAT OPERATES ALL THE GATES IN THE WETWELL, THE PRETREATMENT AREA AND THE MAIN GATE. IF THE GATES ARE RESPONDING REPORT THE CONDITION FOR REPAIR AS LONG AS



**ATTENTION CAN BE GIVEN WITHIN 8HRS. IF THE GATES DO NOT  
RESPOND CALL-IN PERSONNEL IMMEDIATELY. \*\*\***

## AS "LEFT" CONDITIONS

THE FOLLOWING SETPOINTS AND PID TUNING PARAMETERS WERE ENTERED ONTO THE SCREEN ON 9/10/2001:

LEAD PUMP START	105"
LEAD PUMP STOP	80"
LAG PUMP START	130"
LAG PUMP STOP	105"
STANDBY PUMP START	135"
STANDBY PUMP STOP	118"

LEVEL CONTROL SETPOINT 95"

PID PROPORTIONAL	22
PID INTEGRAL	35

IT IS UNDERSTOOD THAT THESE VALUES MAY CHANGE DUE TO OPERATIONAL REQUIREMENTS.

IT IS NOTED THAT THE WETWELL LEVEL SIGNAL FROM WETWELL 1 IS NOT ACCURATE BECAUSE A TEMPORARY BUBBLER TUBE WAS PLACED DUE TO FAILURE OF THE ORIGINAL BUBBLER TUBE. IF A NEW TUBE IS INSTALLED, THE START AND STOP LEVELS MAY NEED TO BE CHANGED. THE PID TUNING PARAMETERS MAY ALSO NEED TO BE CHANGED.

THE TIMER VALUES FOR THE GRIT, SCREENS, AND CONVEYORS ARE NOT RECORDED BECAUSE AN ELECTRICAL PROBLEM WAS ENCOUNTERED WITH THE PLC SYSTEM ON 9/13/2001 AND ACTUAL AUTOMATIC OPERATION WAS NOT TESTED.

Note: We need to list available system alarms for SOP's @ each Station